



Quarterly Training Summit

April 2016

**U.S. Department of Labor
Mine Safety & Health Administration**

April 27, 2016

Agenda

12:30pm – Jeff Duncan	Welcome and Introduction of Assistant Secretary Main
12:32pm – Joe Main	Opening Remarks
12:40pm – Marcus Smith	Review of Coal Fatalities Review of Coal Serious Accidents
12:50pm – Larry Trainor	Review of MNM Fatalities Review of MNM Serious Accidents
1:00pm – Neal Merrifield Terence Foreback	Initiative: Materials Storage & Warehouse Safety
1:05pm – Jeff Duncan Chip Laite	Aggregates Safety Series Small Mines
1:10pm	Questions
1:28pm – Joe Main	Closing Remarks



MSHA Training Summit Coal Mines 1st Quarter 2016

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Coal Fatalities 1st Quarter 2016

4 Fatalities

- January 4, 2016 – Powered Haulage
- January 16, 2016 – Fall of Rib
- January 19, 2016 – Machinery
- March 25, 2016 – Fall of Rib



Coal Fatalities 1st Quarter 2016

4 Fatalities

- West Virginia Powered Haulage (Underground)
- Pennsylvania Fall of Rib (Underground)
- Kentucky Machinery (Underground)
- Kentucky Fall of Rib (Underground)



Coal Fatalities by Occupation 1st Quarter 2016

- Section Foreman- 1
- Continuous Mining Machine Operator-3



1st Quarter – January 2016 Fatality

Fatal No. 1. On January 4, 2016, a 53-year-old section foreman received fatal injuries when he became entangled in a moving underground belt. The victim was preparing to change out a hold up roller when he was caught by the moving belt and roller.



Best Practices

- Never perform work on a moving conveyor belt.
- Ensure that power is off with a visual disconnect before any work is performed.
- Use your own lock and tag to lock out and tag the visual disconnect.
- Ensure that machinery is blocked against motion before performing maintenance or repairs.



1st Quarter – January 2016 Fatality

Fatal No.2. On January 16, 2016 a 31-year-old mining machine operator was fatally injured when a section of coal/rock rib pinned him to the mine floor.



Best Practices

- Train all miners and supervisors to conduct thorough examinations of the roof, face, and ribs where persons will be working and traveling. Correct all hazardous conditions before allowing persons to work or travel in such areas.
- Be aware of potential hazards at all times when working or traveling near ribs. Take additional safety precautions when mining heights increase to prevent development of rib hazards.
- Avoid areas of close clearance between ribs and equipment.
- Know and follow the approved roof control plan and provide additional support when roof or rib fractures, or other abnormalities are detected. Remember, the approved roof control plan only contains minimum requirements.



Best Practices, Cont'd

- Install rib bolts with adequate surface coverage hardware on cycle and in a consistent pattern for the best protection against rib falls. In addition to rib bolts and mesh, setting post on 4 foot centers along questionable rib lines will provide additional protection against rib rolls.
- Be alert for changing conditions, especially after activities that could cause roof disturbance. Report abnormal roof or rib conditions to mine management.
- Adequately support or scale any loose roof or rib material from a safe location. Use a bar of suitable length and design when scaling.
- Danger off hazardous areas until appropriate corrective measures can be taken.



1st Quarter – January 2016 Fatality

Fatal No.3. On January 19, 2016 a 36-year-old continuous mining machine operator was fatally injured between the mining machine and the coal rib.



Best Practices

- Avoid “RED ZONE” areas when operating or working near a remote controlled continuous mining machine. Ensure all personnel; including the equipment operator is outside the machine turning radius before starting or moving the equipment. STAY OUT of RED ZONES.
- Maintain a safe distance from any moving equipment. Position the conveyor boom away from the operator or other miners working in the area or when moving the machine.
- Perform the manufacturer’s required or recommended pre-operation examinations each shift to ensure the proximity detection system is in proper working order. This will verify that the shutdown zones are sufficient to stop the machine before it could contact a miner.
- Always ensure continuous mining machine pump motors are disabled before handling trailing cables and never defeat machine safety controls.



1st Quarter – March 2016 Fatality

Fatal No.4. On March 25, 2016, a 48-year-old continuous mining machine operator was fatally injured a rib fell and pinned him against the haulage equipment.



Best Practices

- Be aware of potential hazards at all times when working or traveling near mine ribs, especially when conditions exist that could cause roof or rib disturbance. Take additional safety precautions in these conditions and when mining heights increase.
- Do not stand between ribs and remote-controlled face equipment.
- Know and follow all provisions of the approved roof control plan. Recognize that this plan has minimum requirements and additional measures must be taken as mining conditions warrant.
- Train all miners to conduct thorough examinations of the roof, face, and ribs where miners will be working or traveling. Correct all hazardous conditions before allowing miners in such areas.
- Continuously watch for changing conditions and conduct more frequent examinations when abnormal conditions are present.



Best Practices, Cont'd.

- Pay particular attention to deteriorating roof and rib conditions when working in, or traveling through, older areas of the mine. Provide additional training for specialized work, such as outby construction, emphasizing best practices for each specific task.
- Perform a site-specific risk assessment for underground construction projects since unusual hazards may be encountered. Identify and correct hazardous conditions related to falls of the roof, face, and ribs.
- Install rib bolts on cycle and in a consistent pattern for the best protection against rib falls.
- Provide additional support when fractures or other abnormalities are detected and use appropriate standing support beneath overhanging brows if they cannot be taken down or adequately bolted.
- Adequately scale any loose rib material from a safe location with a bar of suitable length.
- Historically, rib related accidents occur in areas where the mining height exceeds 7 feet and the cover is more than 700 feet. In such areas, make frequent examinations and take proactive measures to assure adequate, effective rib support is installed and maintained.



Coal: Near Misses and Non-Fatal Accidents



On February 16, 2016, a section foreman was working on a line curtain while kneeling and facing outby. A scoop was being trammed inby and the section foreman noticed the scoop bucket coming over his shoulder. He rolled out of the way and sustained a broken leg.

The investigation revealed that on February 12, 2016, the proximity detection system (PDS) control board was changed. It was discovered that the PDS was missing a system software update. Without the update, the control board and the field generators were not compatible, and the size of the safe zones would change erratically.



Best Practices

- Conduct pre-operational examinations of the PDS, in accordance with the manufacturer's recommendations, prior to operating the equipment.
- Ensure all persons responsible for conducting pre-operational examinations of PDS are trained and knowledgeable of the manufacturer's requirements for conducting a proper examination.
- Sound an audible alarm when tramming mobile equipment through a curtain.



On March 4, 2016, a fire was discovered on an excavator. The fire was in the back of the excavator, which prevented the victim from accessing the lower walkways to exit the machine. While attempting to climb down from the front of the operator's cab, he fell 14 feet to the ground and struck his head.



Best Practices

- Train employees adequately on the equipment they operate, safe work procedures, hazard recognition, and hazard avoidance.
- Train employees adequately on the method of emergency egress for each piece of equipment before they begin operation.
- Maintain equipment in safe operating condition and do not allow any combustible material to accumulate on the equipment.
- Always check, and become familiar with, the fire-fighting equipment on machinery before putting it into operation.



MSHA Training Summit Metal and Nonmetal 1st Quarter 2016

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MNM Fatalities 1st Quarter 2016

- Surface Mines – 3
- Underground Mine – 0
- Classifications
 - Falling Material – 1
 - Powered Haulage – 1
 - Blasting and Break Agents – 1



MNM Fatalities by State

1st Quarter 2016

- Texas – 1
- Utah – 1
- Iowa – 1



MNM Fatalities by Commodity

1st Quarter 2016

- Sand & Gravel – 2
- Limestone – 1



MNM Fatalities by Occupation 1st Quarter 2016

- Contractor – 1
- Truck Driver – 1
- Leadman – 1



1st Quarter – February 2016 Fatality

On February 26, 2016, a truck driver delivering multiple sections of polyurethane pipe was struck by a section of pipe during the unloading process. A forklift removed two sections of pipe from the passenger side of the truck, and then left the area with the two sections. While the forklift was away, a single, unsecured section of pipe rolled off on the driver's side of the truck and struck the victim. Each section of pipe was approximately 50 feet long and weighed approximately 1,750 pounds. Miners began first aid but the driver was unresponsive. He was transported to the local hospital and later died.



1st Quarter – March 2016 Fatality

On March 8, 2016, a 54-year old miner with 5 years of mining experience was killed at a surface sand mine. The miner backed his haul truck over a dump site and the driver was found at the bottom of the embankment, 60 feet below the dump point. The victim was found unresponsive and partially submerged in water. CPR was attempted, but the victim was not able to be resuscitated.



1st Quarter – March 2016 Fatality

On Tuesday, March 22, 2016, a leadman was struck and killed by flyrock during blasting operations. The victim was over 1,000 feet from the blast site and was waiting in his truck to prevent others from accessing the blast site.



MNM: Serious Accidents



Surface Limestone – A miner operating an empty articulating haul truck lost control on a downhill grade and overturned. The driver was hospitalized with serious injuries - but survived - likely because he was wearing his seat belt.



Underground Gold Mine – Two miners were trapped behind a back/roof fall when they could not safely exit their workplace. The roof fall was from rib to rib and extended approximately 15 feet in length and 5 feet high. The miners were safely removed from the area after being trapped for over four hours with no reported injuries.



Surface Construction Sand and Gravel – A miner finished refueling an excavator and was in the process of stepping down onto the track to lay the fuel nozzle down when he fell. The miner could not recall if he either missed the step or his hand slipped off the handrail. He fell while in a bent over position and landed head first on the barge deck. The miner suffered serious injuries even though he fell only 4 feet.



Best Practices

- Maintain steps, contact surfaces and handholds in useable condition.
- Train all miners and supervisors to conduct thorough examinations of the back/roof where persons will be working and traveling. Do not use worn blades due to the potential to cause kickbacks.
- Task train mobile equipment operators adequately and ensure each operator can demonstrate proficiency in all phases of mobile equipment operation before performing work.
- Always wear a seat belt when operating mobile equipment.



Future MNM Initiatives

Month	Partner	Topic
May	New Mexico Tech	Materials Storage and Warehouse Safety
June	Ohio Aggregate Assn	Hazards and Accidents Around Water
July	National Stone, Sand & Gravel Assn	Be Alert
August	Illinois Aggregate Assn	TBD
September	Equipment Manufacturers Assn	TBD
October	Arizona Rock Products Assn	TBD
November	Colorado Mining Assn & Colorado Stone, Sand & Gravel Assn	TBD
December	Oklahoma Dept of Mines	TBD
January 2017	Institute of Makers of Explosives	TBD



Neal Merrifield

Administrator, Metal and Nonmetal Mine Safety and
Health, MSHA

Terence Foreback

State Mine Inspector, New Mexico



May 2016 Initiative

- Materials Storage and Warehouse Safety
- Co-Sponsored by



Metal and Nonmetal Mine Safety Alert **Materials Storage and Warehouse Safety**

Miners working in warehouses are exposed to hazards that can result in traumatic injuries, musculoskeletal disorders or illnesses from exposure to harmful chemicals. Storing, handling and transporting materials around and inside warehouses can be hazardous work, but maintaining focus on safe job procedures and complying with standards in 30 CFR Parts 56 and 57 will lower the risks associated with working in a warehouse on mine property. By following best practices, mine operators and miners can lower the risk of injury or illness.

Best Practices

- Examine the warehouse on each working shift. Repair or correct any unsafe equipment or conditions.
- Establish safe procedures to accomplish warehouse tasks before beginning work.
- Identify and eliminate or control all hazards associated with the work to be performed.
- Miners must be trained on the task to be performed.
- Delivery workers must receive site-specific training unless accompanied by an experienced miner.
- Do not assign a person to work alone in areas where hazardous conditions could endanger employee safety, and account for everyone at the end of the shift.
- Wear appropriate personal protective equipment, such as a hard hat, safety shoes, gloves and glasses.
- Provide and maintain clean, clear access to warehouses, storage areas and stored materials.
- Keep aisles, travelways and exits clear and free of slip, trip and strike-against hazards.
- Store flammable, combustible and hazardous materials in a way that minimizes the dangers.
- Organize and label storage areas so parts and materials can be quickly located without searching.
- Store materials and supplies in an organized manner to ensure easy access for retrieval and transportation.
- Place heavier loads on lower or middle shelves.
- Store long, tall or top-heavy items on their side or secure them to prevent tipover.
- Place ladders on stable, level surfaces, and use stair platforms to access materials in higher locations.
- Lift materials properly. Bend your knees, keep your back straight, hold the load close to your body, maintain a clear vision path and turn your feet and whole body together (never twist at your waist).
- To the extent feasible, lift and handle loads in the body's "power zone": between knees and shoulders.
- Use powered equipment such as a forklift or hydraulic fork jack instead of manually lifting heavy materials.



Jeff Duncan

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Chip Laite

President, Maine Aggregate Association, State Council
of the Joseph A. Holmes Safety Association



Aggregates Safety Series Small Mines

**DVD
643**

A Mine Safety And Health Administration Video Production
In Cooperation With The Maine Aggregate Association



Aggregates Safety Series Small Mines

Introduction

Maine Aggregates

An Overview of Part 46

Task Training

Workplace Examinations

Preoperational Inspections

Stay Focused: The Second Worst Call

At The End Of The Day



Questions?



Use this link to submit training questions

mshatraining@dol.gov

